



SHILAP Revista de Lepidopterología

ISSN: 0300-5267

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Sociedad Hispano-Luso-Americana de

Lepidopterología

España

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SHILAP Revista de Lepidopterología, vol. 37, núm. 147, septiembre, 2009, pp. 301-305

Sociedad Hispano-Luso-Americana de Lepidopterología

Madrid, España

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Two new species of the genus *Aroga* Busck, 1914 from Tadzhikistan (Lepidoptera: Gelechiidae)

O. Bidzilya

Abstract

Two new species: *Aroga atraphaxi* Bidzilya, sp. n. and *A. panchuli* Bidzilya, sp. n., reared from *Atraphaxis pyrifolia* (Bunge) (Polygonaceae), are described from Tadzhikistan. A list of Gelechiidae, associated with the plant genus *Atraphaxis* is given.

KEY WORDS: Lepidoptera, Gelechiidae, *Aroga*, new species, *Atraphaxis*, Tadzhikistan.

**Dos nuevas especies del género *Aroga* Busck, 1914 de Tadzhikistán
(Lepidoptera: Gelechiidae)**

Resumen

Se describen de Tadzhikistán dos nuevas especies: *Aroga atraphaxi* Bidzilya, sp. n. y *A. panchuli* Bidzilya, sp. n., criados de *Atraphaxis pyrifolia* (Bunge) (Polygonaceae). Se da una lista de los Gelechiidae, asociados con las plantas del género *Atraphaxis*.

PALABRAS CLAVE: Lepidoptera, Gelechiidae, *Aroga*, nuevas especies, *Atraphaxis*, Tadzhikistán.

Introduction

Holarctic genus *Aroga* Busck, 1914 comprises 21 species in the Nearctic (HODGES, 1983) and twelve species in the Palaearctic region (HUEMER & KARSHOLT, 1999; LI, 2002; PONOMARENKO, 2008). As a result of my study two additional new species were discovered from Tadzhikistan. Both species were reared from *Atraphaxis pyrifolia* (Bunge) (Polygonaceae). Earlier only one *Aroga* species - *A. velocella* (Duponchel, 1838), was known to feed on Polygonaceae (*Rumex acetosella* L) in the Palaearctic region; the remaining species of this genus feeds on Papilionaceae and Rosaceae (HUEMER & KARSHOLT, 1999). The type material is deposited in the Zoological Institute of the Russian Academy of Sciences, Saint-Petersburg, Russia (ZIN).

Descriptions of new species

Aroga atraphaxi Bidzilya, sp. n.

Material examined: Holotype ♂, Tadzh.[ikistan] Gissarsk.[iy] khr.[ebet], ushch.[elie] Kondara 1100 [m], Shernijazova / vvv.[odka] No. 57, G.[usenitsa] 15-VI, K.[ukolka] 1-VII, v.[ylet] 12-VII-[1]971, *Atraphaxis pyrifolia* (in Cyrillic characters) [Tadzhikistan, Gissarskiy Range, Kondara, 1100 m, Shernijazova leg. / No. 57, Larva 15-VI, Pupa 1-VII, Adult 12-VII-[1]971, *Atraphaxis pyrifolia*] (ZIN). Paratypes: 2 ♂♂, 1 ♀, same data as holotype (gen. prep. 61/06) (ZIN); 1 ♂, 1 ♀, same data, but 1300; 1

♂, same data, but 1400, vyv.[odka] No. 55, G.[usenitsa] 10-VI, K.[ukolka] 23-VI, v.[ylet] 9-VII-[1]1971; 1 ♂, same data, but v.[ylet] 17-VII (gen. prep. 27/09) (all ZIN).

Description (Fig. 1): Wingspan 14.5-15.5 mm. Head light grey, its upper part, thorax and tegulae covered with light grey brown-tipped scales, frons nearly white; labial palpus recurved, far protruded over the head, second segment light grey, base brown, beneath with brash of long brown-tipped scales; third segment brown with white apex, very narrow, pointed, half as long as second segment; scapus brown, other antennal segments brown with white basal ring; proboscis grey, well developed. Forewing covered with light-grey scales with brown tip, ground colour light-grey; costal margin with two small and two large triangular spots, two small basal spots in middle and near posterior margin, two merged or closely placed dark spots in middle of cell and one small spot in the corner of cell; apex of wing dark, sometimes with terminal spots, separated by indistinct cream fascia; cilia light grey, brown-tipped; hindwing grey.

Variation: Examined specimens show little variation in the ground colour of forewing; dark spots along costal margin vary in size.

Male genitalia (Figs. 2, 3): Tergite VIII ribbon-like, moderately broad, posterior margin weakly rounded; sternite VIII broad, with long and narrow posterolateral lobes, posterior half membranous, anterior margin with small rounded medial emargination. Uncus long, narrow, weakly constricted in middle, widened before apex, apex pointed. Tegumen narrow with very deep anterior emargination. Valva of moderate length, sited nearly parallel, weakly narrowed before apex, apex terminated in long needle. Posterior margin of vinculum with relatively long, apically rounded lobes. Saccus long and broad, weakly constricted before apex. Aedeagus long, straight, apex with distinct down-curved sclerite, vesica with small cornuti.

Female genitalia (Fig. 4): Papilla anales prolonged, rounded apically, sparsely covered with long setae. Apophyses anteriores very short, slender. Segment VIII strongly sclerotized, about 1.5 times longer than wide, with distinct sub-rounded medial invagination; posterior margin with distinct, relatively long lateral lobes. Antrum long, straight, with strongly developed lateral sclerotization, weakly broadened posteriorely. Ductus bursae very short. Corpus bursae sub-rounded. Signum a sub-rounded plate with four long spines.

Diagnosis: The new species resembles *A. aristotelis* (Millière, 1876) externally and in the genitalia of both sexes. The ground colour of forewing is lighter, sandy grey, whereas forewings of *A. aristotelis* are usually dark brown; moreover the new species is characterized by distinct usually merged black spots in cell and strongly developed sub-triangular spot at two-thirds of costa. Paired black spots at the base of cell are clearly separated and sub-apical spot is poorly expressed by *A. aristotelis*. The male genitalia slightly differ in usually shorter valva and normally rounded rather than pointed vinculum processes. The female genitalia are almost undistinguishable from those of *A. aristotelis*, but differ slightly in narrower ductus bursae.

Biology: Host-plant *Atraphaxis pyrifolia* Bunge (Polygonaceae). According to the label information the larvae were found in mid June (10 and 15-VI), pupation took place from 23-VI to 3-VII, and adults emerged 9 and 12-VII. Type material was collected at altitudes between 1100 and 1400 m.

Distribution: Known only from the type locality in Tadzhikistan (Kondara near Dushanbe).

Etymology: The new species is named after the host plant of its larva.

Aroga panchuli Bidzilya, sp. n.

Material examined: Holotype ♂, Tadzh.[ikistan] Gissarsk[iy]. khr.[ebet], ushch.[elie] Kondara 1400 [m], Shernijazova / vyv.[odka] No. 10, G.[usenitsa] 23-IV, K.[ukolka] 20-V, v.[ylet] 25-VI-[1]1972, *Atraphaxis pyrifolia* (in Cyrillic characters) [Tadzhikistan, Gissarskiy Range, Kondara, 1400 m, Shernijazova leg. / No. 10, Larva 23-IV, Pupa 20-V, Adult 25-VI-[1]1972, *Atraphaxis pyrifolia*] (ZIN). Paratypes: 1 ♂, same data, but G.[usenitsa] 23-IV, K.[ukolka] 20-V, v.[ylet] 25-VI-[1]1972; 2 ♂♂, 1 ♀, same data, but 1300 [m], G.[usenitsa] 23-IV, K.[ukolka] 19-V, v.[ylet] 3, 20,25-VI-[1]1972 (gen. prep. 28/09, ♂); 1 ♂, 1 ♀, same data, but vyv.[odka] No. 11, G.[usenitsa] 5-V, K.[ukolka] 21-V, v.[ylet] 9,10-

VI-[1]971 (gen. prep. 79/06, ♂); 1 ♀, same data, G.[usenitsa] 5-V, K.[ukolka] 18-V, v.[ylet] 6-VI-[1]971 (gen. prep. 23/09); 1 ♂, 8-VI-195[?...g., Gissarskiy chr., ushch. Kondara, vvv.[odka] iz kuk.[olki], gus.[enitsa] s kurchavki, V. Degtjareva (gen. prep. 78/06); 1 ♀, 30 km N Dushanbe, Kondara, 27-VI-[19]86 (Puplesis) (all ZIN).

Description (Fig. 5): Wingspan 13.5-15 mm. Head yellowish-cream; labial palpus recurved, far protruded over the head, second segment yellowish with rare brown scales at base, beneath with brash of long scales; third segment brown, very narrow, acute slightly shorter than second segment; scapus brown, other antennal segments brown with white basal ring; proboscis cream, well developed. Thorax and tegulae black. Forewing black with three narrow white fascias: the first oblique fascia from one-quarter of costal margin nearly to the posterior margin, the second diffuse medial fascia does not reach posterior margin, and the third weakly curved basally fascia at two-thirds length; cilia dark; hindwing grey.

Variation: Medial fascia sometimes reduced to few separated white scales.

Male genitalia (Figs. 6, 7): Tergite VIII ribbon-like, moderately narrow, posterior margin rectangular; sternite VIII broad, posterior half membranous, with short and broad posterolateral lobes, anterior margin with deeply rounded medial emargination. Uncus long, narrow, sited nearly parallel, apex weakly pointed. Tegumen narrow with very deep anterior emargination. Valva short and broad, outer margin distinctly curved before apex, apex terminated in long needle. Posterior margin of vinculum with short, apically rounded lobes. Saccus long and narrow, apex rounded. Aedeagus long, straight, apex with distinct down-curved sclerite, vesica with numerous small cornuti.

Female genitalia (Fig. 8): Papilla anales prolonged, rounded apically, sparsely covered with long setae. Apophyses anteriores short, slender. Segment VIII strongly sclerotized, about 1.5 times longer than wide, with distinct sub-rounded medial invagination; posterior margin with distinct, relatively long lateral lobes. Antrum long, weakly curved, with strongly developed lateral sclerotization. Corpus bursae sub-oval. Ductus bursae very short. Signum a small rounded plate with four spines.

Diagnosis: The new species can be easily recognised externally by its black forewing with three narrow cream fascias, being somewhat related externally to *A. mesostrepta* (Meyrick, 1932). This last species is characterized by more prolonged and narrower forewing with broader fascias. The male genitalia resemble those of *A. hultemiella* Kuznetzov, 1960, having short and apically narrowed valva with distinctly curved outer margin, but differ slightly in vinculum processes, that are slightly pointed, rather than rounded apically. The female genitalia are similar to *A. aristotelis* Mill., but differ in slightly longer apophyses anteriores and shorter spines of signum bursae.

Biology: Host-plant *Atraphaxis pyrifolia* Bunge (Polygonaceae). According to the label information the larvae occur from 23-IV to 5-V, pupation took place between 18 and 21-V, and adults fly from 2 to 27-VI. Type material was collected at 1300-1400 m altitudes.

Distribution: Known only from the type locality in Tadzhikistan (Kondara near Dushanbe).

Etymology: The new species is named after an American writer specializing in nature sciences article Yuri Panchul (USA, San-Francisco, California).

A list of Gelechiidae associated with *Atraphaxis* L.

The plant genus *Atraphaxis* L. (Polygonaceae) comprises about 25 species, distributed in steppes and deserts of the Palaearctic region from the Balkan Peninsula to Southern Siberia (eastwards to Transbaikalia), Mongolia and Northern China. Up to now the following seven gelechiid-species are known to feed on *Atraphaxis* L.:

Aristotelia avanica Piskunov & Emelyanov, 1982 (Armenia, Uzbekistan) - *A. spinosa* L.

Aristotelia tyttha Falkovitsh & Bidzilya, 2003 (Uzbekistan) - *A. spinosa* L.

Gladiovalva igorella Falkovitsh & Bidzilya, 2003 (S Kazakhstan, Uzbekistan) - *A. spinosa* L.

Neofriseria turkmeniella Piskunov, 1987 (Uzbekistan, Turkmenistan, S Kazakhstan, Tadzhikistan) - *A. spinosa* L., *A. badghysi* Kult., *A. pyrifolia* Bunge.

Spiniductellus atraphaxi Bidzilya & Karsholt, 2008 (Tadzhikistan) - *A. pyrifolia* Bunge.

Aroga atraphaxi Bidzilya, sp. n. (Tadzhikistan) - *A. pyrifolia* Bunge.

Aroga panchuli Bidzilya, sp. n. (Tadzhikistan) - *A. pyrifolia* Bunge.

Acknowledgements

I wish to express my gratitude to Dr S. Yu. Sinev (ZIN) for his assistance during my work with the collection of ZIN and Dr V. N. Fursov (Schmalhausen Institute of Zoology, Kiev, Ukraine) for his help with preparing of genitalia photographs.

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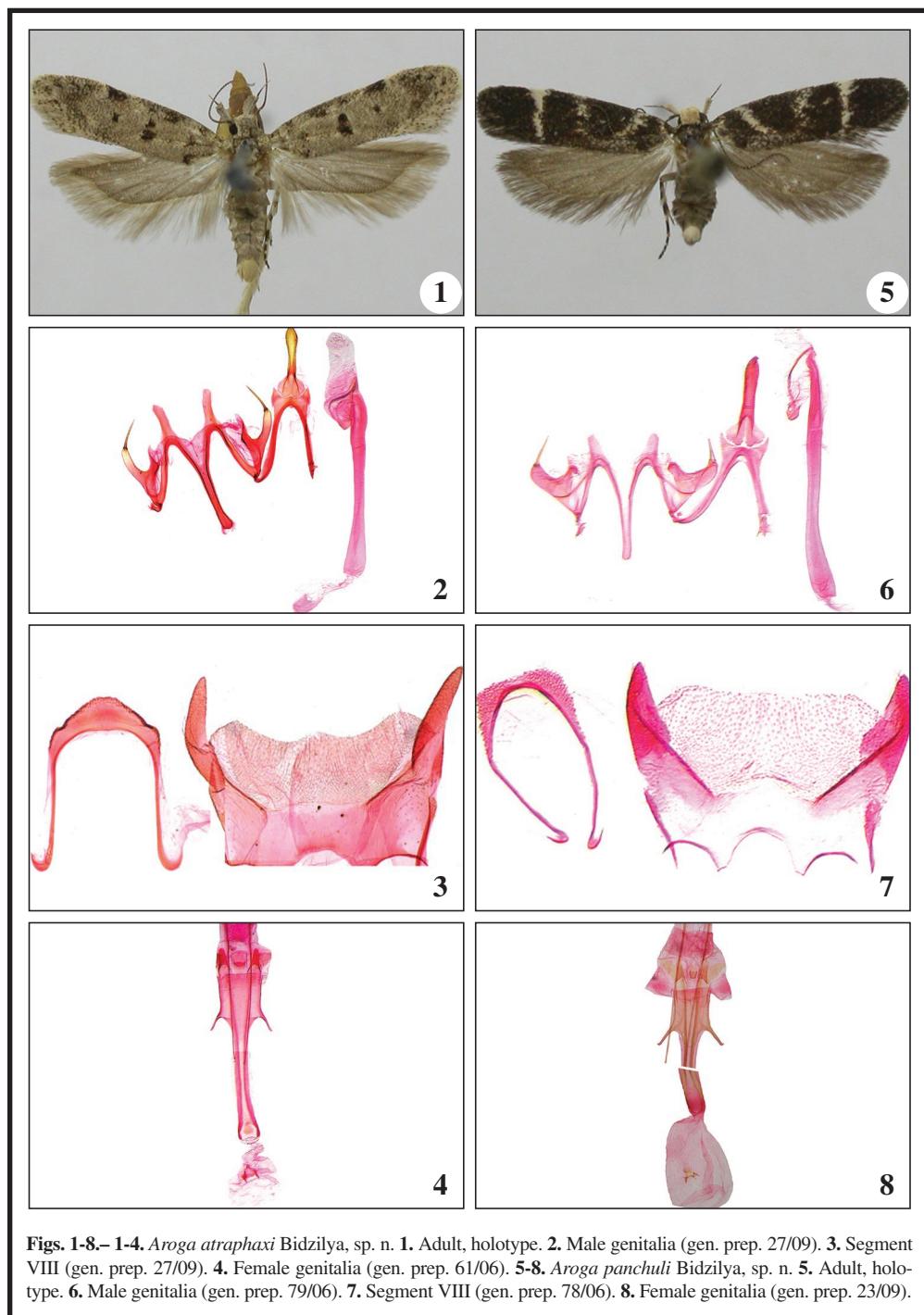
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(Recibido para publicación / Received for publication 5-V-2009)

(Revisado y aceptado / Revised and accepted 25-V-2009)

(Publicado / Published 30-IX-2009)



Figs. 1-8.—1-4. *Aroga atraphaxi* Bidzilya, sp. n. 1. Adult, holotype. 2. Male genitalia (gen. prep. 27/09). 3. Segment VIII (gen. prep. 27/09). 4. Female genitalia (gen. prep. 61/06). 5-8. *Aroga panchuli* Bidzilya, sp. n. 5. Adult, holotype. 6. Male genitalia (gen. prep. 79/06). 7. Segment VIII (gen. prep. 78/06). 8. Female genitalia (gen. prep. 23/09).